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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Matus, Tim A.
Serial No. : 10/605,931
Filed : November 6, 2003
For : One-Piece Consumable Assembly
Group Art No. : 3742
Examiner : Paschall, M.

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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REPLY BRIEF RESPONSIVE TO EXAMINER'S ANSWER
MAILED AUGUST 4, 2008

Dear Sir:

This Reply Brief is being filed in response to the Examiner's Answer mailed on August 4, 2008.

REPLY BRIEF

In the Examiner's Answer mailed on August 4, 2008, the Examiner maintained the rejection of claims 1-27 under 35 U.S.C. §103(a) as being unpatentable over Luo (USP 5,856,647) in view of Raney et al. (USP 4,967,055) and dismissed Appellant's arguments set forth in the Appeal Brief of June 19, 2006 with respect to those claims. The assertions set forth in the Examiner's Answer are addressed herebelow.

In the Examiner's Answer, the Examiner maintained the rejection of claims 1-27 under §103(a), stating that "[t]he claimed invention is directed to a plasma torch apparatus comprising a nozzle, an electrode and a shield cup" and that "Applicant's claims are silent as to an integral assembly steps or language depicting the same." *Examiner's Answer*, August 4, 2008, p. 5. The Examiner thus asserted that the torch taught in Luo and the nested assembly of Raney et al. could each be "construed as an integral connection, barring further description in the claims of just what an integral connection comprises." *Id.* The Examiner further stated that "Appellant's arguments are directed more to the disclosure of the invention, not what is claimed in the invention." *Id.* Appellant strenuously objects to the assertion by the Examiner with respect to what is set forth in the present claims and the characterization of arguments previously set forth by the Appellant.

Initially, with respect to what is set forth in the present claims and Appellant's arguments with respect to those claims, Appellant disagrees with the Examiner's assertion that the claims "are silent as to an integral assembly" and that "Appellant's arguments are directed more to the disclosure of the invention, not what is claimed in the invention." The Examiner is ignoring express claim limitations, and also ignores any interpretation of those limitations based on the specification.

Each of the independent claims clearly sets forth an assembly that is integrally formed as a one-piece assembly and/or an assembly that is press-fit together so as to form a single component. Claim 1 calls for, in part, a plasma torch consumable assembly having a tip integrally connected with a shield cup and an electrode to form **a one-piece assembly** wherein the tip is constructed to secure the one-piece assembly to a torch body. Claim 12 calls for, in part, **a one-piece consumable assembly** which includes an electrode and a tip fixedly connected to a cap wherein the tip and constructed to snap-fit the consumable assembly to the torch. Claim 17 defines a replacement plasma torch consumable kit wherein at least two of a shield cup, an electrode, and a tip are press-fit to one another. Claim 22 calls for a method of manufacturing a plasma torch consumable assembly which includes, in part, the step of integrally connecting an electrode within a perimeter of a tip in a single unitary consumable structure.

The limitations of the claims, when read in light of the specification, are properly interpreted as setting forth an integral, one-piece unitary consumable structure. That is, the specification clearly sets forth that components of the consumable assembly are “fixedly connected” or “press-fit” to one another so as to form a “one-piece consumable assembly” for connection to a torch body. Application, ¶25 and 27. The Examiner’s assertion that the claims are “silent as to an integral assembly” ignores express claim limitations which are clearly described in the specification and directly contradicts a proper interpretation of the claim limitations when read in light of the specification. For this reason alone, the Examiner’s characterization of what is set forth in the present claims is improper. Additionally, the Examiner’s characterization of what is set forth in the present claims goes against the plain meaning of what is set forth therein. As set forth in MPEP 2111.01(I), in examining claims, “the words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification.” As further set forth in MPEP 2111.01(III), “[t]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)). The meaning of an “integral” or “one-piece” assembly is plain to one skilled in the art, and would be understood to denote a composition of components formed “as a unit” and “that together make a whole.”¹ Thus, the Examiner mischaracterizes what is called for in the present claims when asserting that they are “silent as to an integral assembly” and fail to provide a description of “just what an integral connection comprises.” The terms “integral connection,” “one-piece assembly,” and “single unitary consumable structure,” in and of themselves, have a plain meaning to one skilled in the art as describing a single, unitary structure, and such meaning cannot be ignored by the Examiner. Thus, Appellant believes that the Examiner has improperly characterized what is set forth in the present claims and failed to give patentable weight to each element called for therein.

Lack of Motivation to Modify the Combined References to Achieve the Present Invention

With respect to a motivation for combining the teachings of Raney et al. with Luo, the Examiner maintained that Raney et al. provides “a pre-assembled or integral nested unit of the front end assembly, to enhance the torch safety” and that “this teaching provides one of ordinary skill in torch assembly to form the front end assembly in Luo in a pre-assembled manner...” *Examiner’s Answer*, supra at 6. As previously set forth on numerous occasions, Appellant does

¹ See <http://www.merriam-webster.com/dictionary/integral> and <http://encarta.msn.com/integral.html>.

not necessarily disagree that Raney et al. discloses the safety benefits of some system components being preassembled. However, nothing in Raney et al. suggests a modification to the system disclosed therein or to Luo that would lead to that which is called for in the present claims. In fact, the prior art teaches the benefits of a configuration that is markedly different from the current invention. There is no suggestion or motivation in the art of record to modify the references in the manner done by the Examiner to achieve the claimed invention -- absent Appellant's own disclosure.

Raney et al. discloses a system in which three separate and distinct elements, an electrode, a tip and swirl ring, and a nozzle, are set forth in the front-end assembly for plasma cutting. See Raney et al., col. 3, lns 11-14. Additionally, it describes in detail the re-assembly that is required by an operator when replacing individual components of this three-piece assembly. The arrangement disclosed in Raney et al. “[c]reates a stacked configuration in the front-end assembly which adds an additional measure of safety in the event an operator fails to properly re-assemble the torch in the field.” Raney et al., col. 7, lns. 50-53. Therefore, there is the possibility that an operator can indeed re-assemble incorrectly. Raney et al. further states that “[i]f an operator is replacing one or more worn parts in the field, it is possible to omit one or more parts during re-assembly.” Raney et al., col. 7, lns. 53-55. Thus, Raney et al. expressly discloses that each of the three separate parts of the front-end assembly is individually removable, and further, that in-field assembly of the stacked consumable assembly is allowed even with omission of one or more of the three parts of the assembly. This is in stark contrast to the configuration set forth by the current invention, which calls for an integral one-piece consumable that can be easily manipulated by an operator and which removes the possibility of re-assembly errors by setting forth that the entire one-piece assembly be replaced when replacing worn out components. Appellant's invention solves the problem associated with the prior art. The system disclosed in Raney et al. is the exact type of system that is meant to be addressed by the present Application, so as to resolve the issue of improper assembly. Raney et al. serves as witness to the industry need for the solution provided by Appellant's presently claimed invention. The combination of the Luo and Raney et al. systems therefore simply cannot resolve the assembly shortfalls addressed by the presently claimed invention, and there is no motivation set forth in either reference to modify the systems therein to come up with the present invention (absent Appellant's disclosure).

In an effort to overcome the clear deficiencies of the cited references, the Examiner has grossly mischaracterized the present claims, asserting that “[t]he present claims are silent as to how the components are formed as an integral unit, such as by welding or press-fit assembly” and

that “Appellant’s claims do not preclude the consumable nested torch components being assembled together in a nested, integral manner, before connection to the torch assembly,” as allegedly taught in Raney et al. *Examiner’s Answer*, supra at 7. The claims are not “silent as to an integral assembly” and, as such, the nested arrangement in Raney et al. cannot be said to teach that which is called for in the present claims.

Independent claim 1 clearly sets forth an assembly that is not only “integrally connected” together, but also specifies that it is a “one-piece assembly.” Claims 12 and 17 set forth a “one-piece consumable assembly” and replacement consumable kit that have a cup, tip, and electrode that are “fixedly connected” or “press-fit” to one another. Claim 22 calls for a “single unitary consumable structure.” The limitations in each of the claims, alternately describing the consumable assembly as being “integrally connected,” a “one-piece assembly,” and a “single unitary consumable structure,” are clearly set forth and defined in the specification. See Application, ¶25 and 27. Furthermore, each of the claimed have a plain meaning to one skilled in the art of what is meant thereby. The terms “integral connection,” “one-piece assembly,” and “single unitary consumable structure,” in and of themselves, have a plain meaning that cannot be ignored by the Examiner. The fact that a particular method for forming the “one-piece assembly” or “single unitary consumable structure” is not set forth in each and every independent claim does not negate the fact that an integrally connected “one-piece assembly” or “single unitary consumable structure” is still called for. When the limitations of each claim are given their proper patentable weight, Raney et al. cannot be said to teach that which is called for therein.

As set forth above, not only does Raney et al. fail to address use of an integrally connected “one-piece assembly” or “single unitary consumable structure” as described above, it actually teaches away from the current invention by disclosing the benefits of the three separate and distinct element construction of the assembly disclosed therein. Raney et al. states that the three-part, front-end assembly is “relatively easy to manufacture,” “facilitates replacement of worn or damaged parts,” and that the unique “arrangement of the front-end assembly provides a significant measure of protection over the prior art.” Raney et al., col. 3, lns. 18-21, col 8, lns. 3-6. Thus, Raney et al. provides specific reasons for the separate and distinct nature of the elements disclosed therein. The Examiner’s conclusion that one of ordinary skill in the art would be motivated to provide a one-piece assembly as presently claimed directly contradicts the express disclosure of Raney et al. that the (1) electrode, (2) the tip and swirl ring, and (3) the nozzle be three separate and distinct elements of the assembly. This disclosure of Raney et al. is explicit and cannot simply be ignored or discounted. Furthermore, the disclosure of Raney et al. that the

three-piece assembly “facilitates replacement of worn or damaged parts” directly contradicts the Examiner’s assertion that the one-piece consumable assembly of the claims is suggested therein. No degree of interpretation of the reference is required. The statements of the reference are explicit and teach away from the one-piece assembly called for in the present claims, and Raney et al. provides specific reasons for the separate and distinct nature of the elements. The Examiner has not supplied any reference for teaching or suggesting an integrally connected “one-piece assembly” or “single unitary consumable structure,” as presently claimed. The combination of Luo and Raney et al. does not teach or suggest what is called for in the present claims, and modifying the combination of cited references to achieve the present invention would discount the expressly teaching of Raney et al.

To conclude that one of ordinary skill in the art would be motivated to unify the three piece assembly of Raney et al. into a single unitary assembly is a suggestion that is diametrically opposed to what the art of record teaches. It seems apparent that the ‘motivation’ to combine and modify the references in the manner suggested by the Examiner has been derived solely from Appellant’s application. Raney et al. teaches away from the claimed invention because they allow for operator error in re-assembly of the individual components and recite the specific benefits of a three-piece assembly. The Examiner has utilized Appellant’s own disclosure as a blue print in an attempt to derive the claimed invention from the art of record.

In as much as the art of record teaches away from the presently claimed invention and that modification of the references in the manner suggested by the Examiner is contrary to that specifically disclosed in the references, and that any modification to the combination of Luo and Raney et al. is the result of impermissible hindsight, the art of record does not include the motivation or suggestion to modify the references in the manner done by the Examiner. Accordingly, a rejection under §103 cannot be sustained and Appellant asserts claims 1-27 are patentably distinct over the art of record.

References’ Failure to Teach or Suggest Each and Every Claim Limitation

In maintaining the rejection of the present claims, the Examiner stated that “clearly the assembly of Luo as modified could be connected to the torch as a component assembly, as suggested by Raney et al” and that “success of such modification would ensue, since all of the claimed components [of the present invention] are set forth in Raney et al and in Luo....” *Examiner’s Answer*, supra at 7. Appellant respectfully disagrees and believes that the Examiner has continued to mischaracterize the teachings of Rainey et al. and failed to give patentable weight to what is specifically called for in the present claims.

As set forth in detail above, the current invention is an improvement over anything disclosed in the Examiner's prior art references. It is clear that Raney et al. fails to disclose that which is called for in the current invention. Each of the claims 1, 12, 17, and 22 specifies a plurality of components, which of those components are connected, and how those components are connected. Raney et al. simply does not teach or suggest that the electrode, tip, and nozzle elements disclosed therein are formed as an integral, one-piece, or unitary assembly as is called for in the present claims. The Examiner's interpretation of what the reference discloses is far different from what is actually disclosed. The only components that are integrally connected in Raney et al. are the tip element and swirl ring. See Raney et al., col. 2, ln 16. This should not be confused with the one-piece integral assembly that is currently claimed. The integral tip and swirl ring disclosed in Raney et al. makes up only one individual piece of the three-piece front-end assembly therein. No suggestion or teaching is made in Raney et al. to further combine the separate parts of the front-end assembly to form an integral one-piece assembly. The Examiner's interpretation of Raney et al. removes statements from the context in which they are given and ignores other disclosure contained therein. Only Appellant's application offers the "suggestion" of the prior art modifications made by the Examiner.

In view of the above remarks, Appellant respectfully submits that claims 1-27 are patentably distinct over the art of record. Accordingly, Appellant requests that the Board direct that each of the outstanding rejections be withdrawn and that the present Application proceed to issuance.

Respectfully submitted,

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